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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/554,129	02/02/2006	Tsuneo Maruyama	09852/0203468-US0	9359

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EXAMINER	
ZHU, WEIPING	
ART UNIT	PAPER NUMBER
1793	

MAIL DATE	DELIVERY MODE
08/04/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/554,129	MARUYAMA ET AL.	
	Examiner	Art Unit	
	WEIPING ZHU	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 July 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 9, 2008 has been entered.

Status of Claims

2. Claims 1-4 are currently under examination wherein claims 1 and 2 have been amended in applicants' amendment filed on June 9, 2008.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP ('162) in view of Dautzenberg et al. (US 5,628,046).

With respect to claims 1-4, JP ('162) discloses a wear resistant bearing for motor fuel pump comprising a Cu-based sintered body of compacted powders having a composition in weight of 1-8% graphite, 0.1-0.9% P and 20-40% Ni and having a porosity of 5-25% (abstract). The content ranges of graphite, P and Ni in the Cu-based

sintered body of JP ('162) overlap the claimed respective content ranges (1-5% graphite, 0.1-0.9% P and 17.6-25.2% Ni) and the porosity of the Cu-based sintered body of JP ('162) also overlaps the claimed porosity. A prima facie case of obviousness exists. See MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed ranges within the disclosed ranges of JP ('162) with expected success, because JP ('162) discloses the same utility over the entire disclosed ranges.

JP ('162) further discloses that Cu-Ni alloy powder containing different percentages of Ni, Cu-P alloy powder containing 33% of P and graphite powder were blended to make green compacts (paragraph [0010], translation). JP ('162) does not specify the content of Ni in the Cu-Ni alloy powder, the content of Cu-P alloy in the powder mixture as claimed and the P content in the Cu-P alloy powder disclosed in the embodiment of JP ('162) is higher than the claimed content in the instant claims 1 and 2. However, it is well held that discovering an optimum value of a result-effective variable involves only routine skill in the art. In re Boesch, 617, F.2d 272, 205 USPQ 215 (CCPA 1980). In the instant case, the content of Ni in the Cu-Ni alloy, the content of Cu-P alloy in the powder mixture and the content of P in the Cu-P alloy are result-effective variables, because they would directly affect the final contents of Ni and P in the Cu-based sintered body of JP ('162), which would in turn directly affect the corrosion resistance and abrasion resistance respectively of the Cu-based sintered body of JP ('162) as disclosed by JP ('162) (paragraphs [0006 and [0007], translation). Therefore it would have been obvious to one skilled in the art to have optimized the content of Ni in

the Cu-Ni alloy and the content of P in the Cu-P alloy in the Cu-based sintered body of JP ('162) in order to achieve desired corrosion and abrasion resistances of the Cu-based sintered ring body. See MPEP 2144.05 II.

JP ('162) further discloses that the blended base powders are press-formed into a green compact under a pressure between 150-300 MPa and the green compact is sintered into a sintered body (paragraph [0010], translation). The highest pressure of JP ('162) is close to the lowest pressure as claimed in the instant claims 1 and 2. One of ordinary skill in the art would expect similar properties of the green compacts of JP ('162) and the instant invention. A prima facie case of obviousness exists. See MPEP 2144.05 I.

JP ('162) does not disclose that the sintered body is sized within the range of 400 to 500 MPa as claimed in the instant claims 1 and 2. Dautzenberg et al. ('046) discloses sizing sintered articles for smoothing the roughness without specifying the pressure range (col. 4, lines 12-15). However, as discussed in the paragraph above, the pressure is also a result-effective variable, because it would directly affect the smoothness of the surface as disclosed by Dautzenberg et al. ('046) (col. 4, lines 12-15). Therefore, it would have been obvious to one skilled in the art to have optimized the pressure of the sizing of Dautzenberg et al. ('046) in order to achieve desired smoothness of the surface. See MPEP 2144.05 II. It would have been obvious to one of ordinary skill in the art at the time the invention was made to size the sintered body of JP ('162) as disclosed by Dautzenberg et al. ('046) in order to improve surface quality and

dimensional stability of the sintered body of JP ('162) as disclosed by Dautzenberg et al. ('046) (col. 4, lines 12-15).

JP ('162) further discloses a process for making the wear resistant bearing which is substantially identical to the process as disclosed in the instant disclosure (paragraph [0010], translation).

JP ('162) does not specify the structure features of the Cu-based sintered body as claimed in the instant claim 4. However, it has been well held where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977), MPEP 2112.01 [R-3] I. In the instant case, the claimed and JP ('162)'s wear resistant bearings are identical or substantially identical in composition and are produced by identical or substantially identical processes, therefore a prima facie case of obviousness exists. The same distributions of pores, P components and free graphite would be expected in the Cu-based sintered body of JP ('162) as in the claimed Cu-based sintered body.

Response to Arguments

4. The applicant's arguments filed on June 4, 2008 have been fully considered but they are not persuasive.

First, the applicant argues that neither JP ('162) nor Dautzenberg et al. ('046) teaches the molding pressure as claimed; it is the specific choice of the pressures that

provide some of the advantages of the instant invention. In response, see the reason for the rejection of the claimed molding pressure limitation in the paragraph above.

Second, the applicant argues that Dautzenberg et al. (‘046) is silent on the molding pressure. In response, the examiner notes the ground of rejection of the molding pressure limitation relies on the teaching of JP (‘162) instead of that of Dautzenberg et al. (‘046).

Third, the applicant argues that the combination of JP (‘162) and Dautzenberg et al. (‘046) is improper because their sintering temperatures are outside of each other’s ranges. In response, the examiner notes that Dautzenberg et al. ('046) has been applied only to meet the claimed sizing limitations. The combination of Dautzenberg et al. ('046) with JP ('162) with a proper motivation as stated above renders the sizing limitations of the instant application obvious to one of ordinary skill in the art. An overlapping in the sintering temperatures of JP (‘162) and Dautzenberg et al. (‘046) is not required for the combination.

Fourth, the applicant argues that Dautzenberg et al. (‘046) teaches away from the formation of a sintered body with pores dispersed therein as recited in the instant claims; the sizing step of Dautzenberg et al. (‘046) would result in deformation of the surface of the very dense component parts and would take part in further decreasing the pores to the described “extremely small pore volume” ; and it would have not been obvious in view of Dautzenberg et al. (‘046) to produce a bearing with a porosity between 8 and 18% as claimed in the instant claims 1 and 3. In response, the examiner notes that it is well held that mere disclosure of alternative designs does not teach

away. See In re Fulton, 391 F. 3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004). The ground of rejection of the porosity limitation relies on the teaching of JP ('162) as stated above instead of that of Dautzenberg et al. ('046). The porosity range of JP ('162) of 5-25% (abstract) overlaps the claimed range of 8-18%, establishing a prima facie case of obviousness. Dautzenberg et al. ('046) has been applied only to meet the claimed sizing limitations. The combination of Dautzenberg et al. ('046) with JP ('162) with a proper motivation as stated above renders the porosity, sizing and other claim limitations of the instant application obvious to one of ordinary skill in the art.

Conclusion

5. This Office action is made non-final. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Weiping Zhu whose telephone number is 571-272-6725. The examiner can normally be reached on 8:30-16:30 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit 1793

WZ

7/28/2008